to be related to the character of the natural habitat of the species in question. Thus *Salix* sp. (probably *nigra*) stands at one end of the series and shows no injurious effect even when the oxygen of the atmosphere is entirely replaced by either nitrogen or carbon dioxide. At the opposite end of the series stands *Opuntia versicolor*, growth of roots ceasing with an atmosphere containing 50 per cent carbon dioxide, while *Coleus Blumei* is comparable to it, showing injury and ultimate death with the addition of 25 per cent nitrogen to the soil atmosphere. Of the other species tested *Heliotropium peruvianum* was closely comparable to *Opuntia*, while *Nerium oleander* and *Prosopis velutina* prove nearly as resistant as *Salix*. The results seem to indicate that plants growing naturally in well drained soil are much more sensitive to the composition of the soil atmosphere than those from swamps and poorly drained habitats.—GEO. D. FULLER.

Embryo of Aucuba.—PALM and RUTGERS[31] have settled the question of apogamy in *Aucuba japonica*, which has been under suspicion for 40 years. They bagged 300 pistillate flowers and not a single fruit formed, while 600 isolated pistillate flowers produced normal fruit after artificial pollination. It is thought that EICHLER'S original suggestion of apogamy probably came from the fruiting of an isolated pistillate plant which had developed staminate flowers, since the authors have repeatedly found staminate flowers on pistillate plants. Staminate plants have also been observed to produce pistillate flowers.

The flowers open about the time of megaspore formation, and the embryo sac reaches the fertilization stage about 4 weeks later. The solitary megaspore mother cell becomes deeply placed by the extensive development of parietal tissue. The behavior of the 4 megaspores is usually quite normal, but in one case the 2 megaspores nearest the chalaza were found in division. The development of the gametophyte is normal, but stages in endosperm formation were not obtained. The chromosome numbers were determined to be 18 and 36. —J. M. C.

Disease resistance.—JONES[32] has published a summary of his results in securing a race of cabbage resistant to the "yellows." Some of the fundamental questions involved in resistance were considered. The difference between susceptible and resistant plants was found not to be due to any superficial obstacle, but to the different relations of the interior cells of the host and parasite. "The resistant tissues have the ability to restrain the development of the parasite to a greater degree than do the susceptible and so give time for protective cork formation." It was shown also that resistance is clearly inheritable, not as a single character, but as a complex of a number of heritable

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[31] PALM, BJ., and RUTGERS, A. A. L., The embryology of *Aucuba japonica*. Rec. Trav. Bot. Néerland. **14**:119–126. *figs. 12*. 1917.

[32] JONES, L. R., Disease resistance in cabbage. Proc. Nat. Acad. Sci. 4:42–46. 1918.